

Remarks/Arguments:

In the May 6, 2003 Office Action, 1, 2, 4-9, 11, 16, and 18-20 were rejected, claims 10, 12, 14, 15, and 17 were objected to and claims 3 and 13 were allowed. In this Office Action response, claims 1, 2, 9, 14, 16, and 18 are amended, and claim 19 has been cancelled, thus claims 1-18 and 20 are pending.

I. Amendments to the Drawings

The drawings and specification were objected to because a reference sign in FIG. 4 was not described in the specification. In response to the objection, a corrected FIG. 4 is attached herewith. The corrected FIG. 4 does not include the reference sign "X".

The drawings and specification were also objected to because the box to the right of object 38 and intersecting 35 in FIG. 3 is not identified. The display 38 comprises both the dark border and central gray box. To clarify the figure, a corrected FIG. 3 is enclosed which does not include the dark border of the display 38. Withdrawal of the rejection is respectfully requested.

II. Claim Objections

Claims 9 and 14 were objected to because of informalities. Claims 9 and 14 have been amended herein to address these informalities. Withdrawal of these objections is requested.

III. Claim Rejections

A. Rejections under 35 U.S.C. § 112 second paragraph

Claims 1 and 16 were rejected under 35 U.S.C. § 112 as being indefinite based on insufficient antecedent basis. Claims 1 and 16 have been amended herein to correct for insufficient antecedent basis.

B. Rejections under 35 U.S.C. § 102 (b)

Claims 18 and 20 were rejected as being anticipated by WO 00/26665 by Longtin (hereafter "Longtin"). Without acquiescing to rejection, claim 18, from which claim 20 depends, has been amended to more clearly differentiate from the apparatus of Longtin. Specifically, the subject matter of claim 19 has been incorporated into claim 20, and claim 19 has been cancelled. Additionally, claim 18 has been amended to recite "the means for outputting an output indicative of the sample thickness L and index of refraction n , wherein the output indicative of the sample thickness and index of refraction is determined from the distance

measured by the measuring means." This amendment highlights the apparatus of present invention as providing sample thickness AND index of refraction information based solely on data collected from the radiation detector. The uniqueness of the present invention as compared to the apparatus disclosed by Longtin is that the present invention allows for *simultaneous* measurement of the index of refraction and the thickness of a sample using only the data from the radiation detector. Longtin's apparatus requires the user to measure various distances using a ruler. Longtin, page 18, lines 9-11. These additional measurements complicate the measurement procedure, and contribute to the uncertainty of the final measurement values compared to measurements reported by the present invention.

Because the apparatus disclosed in Longtin does not include means for outputting the sample thickness and index of refraction determined from the radiation detector measurements, Longtin does not anticipate or render obvious claim 18, as amended. Withdrawal of this rejection is respectfully requested.

C. Rejections under 35 U.S.C. § 103 (a)

Claims 1, 2, 4/1, 4/2, 5/1, 6/1, 6/2, 7/1, 7/2, 8/1, 8/2, 9/1, 11/1, and 11/2 were rejected under 35 U.S.C. § 103 (a) as unpatentable over U.S. Patent No. 5,633,708 issued to Svendsen (hereafter "Svendsen"). Claim 19 was rejected as unpatentable over Longtin in view of U.S. Patent No. 5,114,235 issued to Suda et al.

1. Claims 1 and 2

While not acquiescing to this rejection, and merely to advance prosecution. claims 1 and 2 have been amended herein to recite methods of determining sample thickness and index of refraction for a sample with at least two surfaces, "wherein, the first and second surfaces are substantially locally flat." Support for this amendment is in the specification as filed at page 4, lines 15-17.

The present invention, as claimed in claims 1 and 2, differs from the disclosure of Svendsen because the sample in the present invention lacks quasi-cylindrical symmetry. Svendsen discloses an apparatus for measuring optical properties of a "quasi-cylindrically symmetric transparent object." Svendsen, column 1, lines 4-7 and lines 58-61. The object to be measured by Svendsen's apparatus must have an axis of rotational symmetry (column 2, lines 6-8), and a radius (column 2, lines 12-13). Svendsen's measured object, identified as item 2 in the figures, is clearly shown as a cylindrical object in FIGS. 2, 5, 7, 8 and 9, with an axis of rotational symmetry identified as item 1 in the figures.

The Office Action states that in FIG. 3, Svendsen discloses a sample with parallel surfaces. Office Action, page 6. The applicants note that FIG. 3 is a diagram of a single layer inside the transparent object. Svendsen, column 4, lines 12-14. This cross section of the sample reveals that the sample contains parallel LINES at the interfaces (represented as 22 and 29), but there are no parallel surfaces. The discussion of FIG. 3 establishes that the object is an object with cylindrical symmetry. Svendsen, column 5, lines 28-31, and lines 34-38.

In contrast, the methods claimed in claims 1 and 2 are directed to measuring samples that have at least a first and a second surfaces. Those sample surfaces are substantially flat, and parallel (according to claim 2), therefore they can NOT possess quasi-cylindrical symmetry. Quasi-cylindrical symmetry requires symmetry about a rotational axis, that is radial symmetry. Because the present invention recites a sample with flat surfaces, the sample does not have a rotational axis providing radial symmetry. Svendsen provides no disclosure, or suggestion of a method for measuring samples lacking quasi-cylindrical symmetry. As claimed, the methods of claims 1 and 2 are samples lacking quasi-cylindrical symmetry.

Because as a reference, Svendsen fails to 1) teach or suggest measuring a sample with substantially locally flat surfaces, 2) provide motivation to modify the sample; and 3) supply any reasonable expectation of success for the present invention, a *prima facie* case of obviousness has not been established. See, MPEP § 2142 (In order to produce a *prima facie* case of obviousness, the Examiner must establish that 1) each claimed element is taught or suggested; 2) there is some motivation or suggestion to modify or combine the references; and 3) there is a reasonable expectation of success).

2. Claims 4/1, 4/2, 5/1, 5/2, 6/1, 6/2, 7/1, 7/2, 8/1, 8/2, 9/1, 9/2, 11/1, and 11/2

Because claims 4/1, 4/2, 5/1, 5/2, 6/1, 6/2, 7/1, 7/2, 8/1, 8/2, 9/1, 9/2, 11/1, and 11/2 depend from claims 1 and 2, they are also patentable in view of the current amendments, as depending from a patentable claim.

3. Claim 19

Claim 19 has been cancelled rendering the rejection moot. The subject matter of claim 19 has been incorporated into claim 18. Claims 18 and 20 are allowable over the cited art as discussed above in section B.

IV. Allowable Subject Matter

The applicants appreciate the acknowledgement that claims 3, 4/3-8/3, 10/3, 11/3, 13 and 15/13 are allowed. The applicants also appreciate the indication that claims 9/3, 10/1, 10/2, 12/1, 12/2, 14, 15/14, 16/13, 16/14, and 17 contain allowable subject matter. Applicants have amended the claims to overcome the objections and formalities rejections, and have amended claims 1, 2, 18 and 20 to more clearly distinguish over the cited art.

V. Summary

In view of the foregoing amendments and remarks, applicants respectfully request that the rejections be withdrawn, and submit that this application is in condition for allowance and respectfully request early and favorable notification to that effect. If it would expedite prosecution of this application, the Examiner is invited to confer with applicants' undersigned representatives.

Respectfully submitted,



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Attachments: Figures 3 and 4 (2 sheets)

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August 5, 2003
Liz Ashton